UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1 -NEW ENGLAND

IN THE MATTER OF	)	
	)	Docket No. AAA-09-0023
	)	
MANN CHEMICAL, LLC	)	**NOTICE OF VIOLATION,**
3134 Post Road	)	**ADMINISTRATIVE ORDER,**
Warwick, Rhode Island 02886,	)	**REQUEST FOR INFORMATION**
	)	
Respondent	)	
	)	
Proceeding under Sections	)	
113 and 114 of the Clean Air Act	)	
	)	

INTRODUCTION

1. The United States Environmental Protection Agency Region I ("EPA") issues this Notice of Violation ("NOV"), Administrative Order ("AO"), and Request for Information ("Information Request") to Mann Chemical, LLC ("Mann") for failure to (a) identify, evaluate and control hazards at its Warwick, Rhode Island facility; and (b) develop and submit a Risk Management Plan for the storage and processing of hydrofluoric acid and hydrochloric acid, in violation of Section 112(r) of the Clean Air Act ("CAA" or the "Act"), 42 U.S.C. § 7412(r), and implementing regulations set forth at 40 C.F.R. Part 68.

2. The NOV and AO are issued under the authority of Section 113 of the CAA, 42 U.S.C. § 7413. Section 113(a)(3) of the Act provides that EPA may issue an order requiring compliance with the requirements or prohibitions of Subchapter I of the Act (which includes, *inter alia,* the requirements of Section 112(r)). The Information Request is issued under the

authority of Section 114 of the CAA, 42 U.S.C. § 7414. Section 114(a)(1) of the CAA gives EPA the authority to require a company to submit such information as EPA may reasonably require to determine its compliance with the CAA.

STATUTORY AND REGULATORY AUTHORITY

3. Pursuant to Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling or storing substances listed pursuant to Section 112(r)(3) of the CAA, 42 U.S.C. § 7412(r)(3), or any other extremely hazardous substance, have a general duty to (a) identify hazards which may result from accidental releases of such substances using appropriate hazard assessment techniques; (b) design and maintain a safe facility taking such steps as are necessary to prevent releases; and (c) minimize the consequences of accidental releases that do occur. Section 112(r)(1) of the CAA is referred to as the "General Duty Clause."

4. Section 112(r) of the CAA, 42 U.S.C. § 7412(r), also authorizes EPA to promulgate regulations and programs to prevent, and minimize the consequences of, the accidental release of certain regulated substances. In particular, Section 112(r)(3), 42 U.S.C. §7412(r)(3), requires EPA to promulgate a list of substances that are known to cause or may reasonably be anticipated to cause death, injury, or serious adverse effects to human health or the environment if accidentally released, and Section 112(r)(5), 42 U.S.C § 7412(r)(5), requires EPA to establish for each regulated substance a threshold quantity over which an accidental release is known to cause or may reasonably be anticipated to cause death, injury, or serious adverse effects to human health. Section 112(r)(7) of the CAA, 42 U.S.C. § 7412(r)(7), requires EPA to promulgate requirements for the prevention, detection, and correction of accidental releases of

regulated substances, including a requirement that owners or operators of certain stationary sources prepare and implement a Risk Management Plan ("RMP").

5. Pursuant to Section 112(r)(7) of the CAA, 42 U.S.C. § 7412(r)(7), EPA promulgated RMP regulations, found at 40 C.F.R.§§ 68.1-68.220 ("Part 68"). Section 68.130 of 40 C.F.R. lists the substances regulated under Part 68 ("RMP chemicals" or "regulated substances") and their associated threshold quantities.

6. Under 40 C.F.R. § 68.10, an owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process must comply with the requirements of Part 68 by no later than the latest of the following dates: (a) June 21, 1999; (b) three years after the date on which a regulated substance is first listed under 40 C.F.R. § 68.130; or (c) the date on which a regulated substance is first present above a threshold quantity in a process.

7. A "process" is defined by 40 C.F.R. § 68.3 as any activity involving a regulated substance, including any use, storage, manufacturing, handling, or on-site movement of such substances, or combination of these activities.

8. Each process in which a regulated substance is present in more than a threshold quantity (a "covered process") is subject to one of three risk management programs, whose eligibility requirements are set forth in 40 C.F.R. § 68.10. Program 1 is the least comprehensive, and Program 3 is the most comprehensive.

9. Under 40 C.F.R. § 68.10(b), a covered process is subject to Program 1 if, among other things, the distance to a toxic or flammable endpoint for a worst-case release assessment is *less* than the distance to any public receptor. Under 40 C.F.R. § 68.10(d), a covered process is subject to Program 3 if the process does not meet the eligibility requirements for Program 1 and

is either in certain specified NAICS codes or subject to the OSHA process safety management standard set forth at 29 C.F.R. § 1910.119. Under 40 C.F.R. § 68.10(c), a covered process meeting neither Program 1 nor Program 3 eligibility requirements is subject to Program 2.

10. Under Section 112(r)(7)(e) of the CAA, 42 U.S.C. § 7412(r)(7)(e), it is unlawful for any person to operate any stationary source subject to regulations promulgated pursuant to Section 112(r) in violation of such regulation or requirement.

11. Section 113(a)(3) of the CAA, 42 U.S.C. §§ 7413(a)(3), authorizes EPA to issue compliance orders for violations of the Act, including violations of Section 112(r), 42 U.S.C. §7412(r).

GENERAL ALLEGATIONS

12. Mann is the operator of a chemical manufacturing and distribution facility (the "facility") located at 3134 Post Road, Warwick, Rhode Island 02886.

13. Mann is a limited liability corporation organized under the laws of the State of Rhode Island and Providence Plantations.

14. As a corporation, Mann is a "person" within the meaning of Section 302(e) of the CAA, 42 U.S.C. § 7602(e), to whom a compliance order may be issued under Section 113(a)(3) of the CAA, 42 U.S.C. § 7413(a)(3).

15. At the facility, Mann manufactures, processes, handles and/or stores hydrofluoric acid, hydrochloric acid, nitric acid, acetic acid, formic acid, phosphoric acid, hydrogen peroxide, sodium hypochlorite, sodium hydroxide, potassium hydroxide, propylene glycol, potassium permanganate, ammonium bifluoride, acetonitrile, tetrahydrofuran, methanol, pentane, hexane, heptane, and other chemicals.

16. The chemical hydrofluoric acid (50% concentration or greater) is a regulated toxic substance listed under 40 C.F.R. §68.130.

17. The chemicals hydrochloric acid, nitric acid, acetic acid, formic acid, phosphoric acid, hydrogen peroxide, sodium hypochlorite, sodium hydroxide, potassium hydroxide, propylene glycol, potassium permanganate, ammonium bifluoride, acetonitrile, tetrahydrofuran, methanol, pentane, hexane, and heptane are chemicals that may, as the result of short-term exposures associated with releases to the air, cause death, injury or property damage due to their toxicity, reactivity, flammability, volatility, or corrosivity.

18. Because of their toxicity, reactivity, flammability, volatility or corrosivity, the chemicals hydrochloric acid, nitric acid, acetic acid, formic acid, phosphoric acid, hydrogen peroxide, sodium hypochlorite, sodium hydroxide, potassium hydroxide, propylene glycol, potassium permanganate, ammonium bifluoride, acetonitrile, tetrahydrofuran, methanol, pentane, hexane, and heptane are "extremely hazardous substances," as referred to in the general duty clause of Section 112(r)(1) of the CAA, 42 U.S.C. §7412(r)(1).

19. The unanticipated emission of any of the chemicals hydrofluoric acid, hydrochloric acid, nitric acid, acetic acid, formic acid, phosphoric acid, hydrogen peroxide, sodium hypochlorite, sodium hydroxide, potassium hydroxide, propylene glycol, potassium permanganate, ammonium bifluoride, acetonitrile, tetrahydrofuran, methanol, pentane, hexane, and heptane into the ambient air from the facility would constitute an "accidental release," as that term is defined by Section 112(r)(2)(A) of the CAA, 42 U.S.C. §7412(r)(2)(A).

20. The facility is a building or structure from which an accidental release may occur and is therefore a "stationary source," as that term is defined Section 112(r)(2)(C) of the CAA, 42 U.S.C. §7412(r)(2)(C), and 40 C.F.R. §68.3.

21. Mann is the "owner or operator," as that term is defined by Section 112(a)(9) of the CAA, 42 U.S.C. §7412(a)(9), of a stationary source.

22. On June 25, 2009, duly authorized representatives of EPA conducted a compliance evaluation inspection of the facility (the "EPA inspection") to determine its compliance with Section 112(r) of the CAA and the Emergency Planning Community Right-to-Know Act ("EPCRA").

23. Under 40 C.F.R. §68.130, the threshold quantity for accidental release prevention for hydrofluoric acid (50% concentration or greater) is 1,000 pounds.

24. On the date of the EPA inspection, Mann produced an inventory of the chemicals currently on site ("Chemical Inventory") that showed that 46,000 pounds of hydrofluoric acid in a concentration of 70% were being stored at the facility.

25. The use, storage, manufacturing, handling or on-site movement of a regulated substance at the facility is a "process," as defined by 40 C.F.R. § 68.3.

26. On the date of EPA's inspection, Mann stored more than the threshold amount of the regulated substance hydrofluoric acid (70%), storage being a "covered process," as that term is defined at 40 C.F.R. § 68.3.

27. As the owner or operator of a stationary source that has more than the threshold amount of a regulated substance in a covered process, Mann is subject to the RMP provisions of Part 68.

28. According to United States Census data, there are 312 persons residing within 0.25 miles of the process at the facility.

29. As a follow up to the EPA inspection, EPA conducted an "Offsite Consequences Analysis" ("OCA") for the 46,000 pounds of hydrofluoric acid (70%) stored and processed at the facility.

30. The OCA for hydrofluoric acid shows that the distance to a toxic endpoint for a worst case release of hydrofluoric acid (70%) from the facility is greater than the distance from the process to a public receptor.

31. The facility's storage and processing of hydrofluoric acid (70%) is subject to the requirements of Program 2, in accordance with the requirements of 40 C.F.R. § 68.10(a) through (d), because the distance to a toxic endpoint for a worst case release of hydrofluoric acid is greater than the distance to a public receptor, but the process does not meet the eligibility requirements for Program 3.

32. EPA inspectors observed numerous examples of deficient chemical management practices at the facility, including, but not limited to, the following:

a. ***Dangerous Conditions.*** EPA inspectors observed several examples of basic safety problems posing a substantial risk of endangerment to the public.

i. At the time of the inspection, two rail cars were being offloaded on the rail spur adjacent to the facility which feeds into a high speed passenger and freight rail line approximately 100 yards away. (Gaffey photo #2054, 2055 and 2060[1]) The first rail car (RR#1[2]) was placarded 1830, indicating that, according to the 2008 U.S. Department of Transportation (DOT) Emergency Response Guide (ERG), it contained sulfuric acid. The first rail car was not chocked, as

[1] Photo references are to photographs delivered by EPA to Mann on June 30, 2009 in a DVD containing two sets of numbered photographs taken by EPA inspectors on June 25, 2009. One set was taken by Jim Gaffey (photos from this set are labeled "Gaffey photo #xxxx"), and one set was taken by Jeffrey Ulman (labeled "Ulman photo #xx")
[2] Containers of chemicals are identified in accordance with the labels used on the attached plan of the Mann Chemical facility, which was provided to EPA by the facility and marked to reflect conditions at the time of the EPA inspection.

required by OSHA regulations at 29 C.F.R. §§ 1917.17(d), which meant that if the brakes failed, the rail car could have rolled to the end of the spur and collided with a high speed passenger train.

ii. At the time of the inspection, EPA inspectors observed a large puddle in the rear lot of the facility, adjacent to a culvert that drained to the Apponaug Cove, which connects with Narragansett Bay. (Gaffey photo #2132, 2133; Ulman photo #72) According to a litmus test conducted by an EPA inspector, the pH of the liquid in the puddle was 1.0. The pH of the puddle was later confirmed by a facility probe to be 1.6. (Gaffey photo #2138) Substances with such a high level of acidity are corrosive and toxic to human health and the environment and are considered by EPA to be corrosive hazardous waste subject to regulation under the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. §§ 6901 et seq.

iii. At the time of the inspection, EPA inspectors observed areas of wet pavement in the rear lot of the facility which suggested that the puddle having a pH of 1.6 (Ulman photo #72) was the result of leaks from the area in which a filling station for hydrochloric acid (1789), acetic acid (1790), sodium hypochlorite (1791), and sulfuric acid (1830) (Ulman photo #56) was located, as well as Tank #11, containing sulfuric acid (1830), and totes containing sodium hydroxide (1824), formic acid (1779), ammonium hydroxide (2672), and sulfuric acid (1830) (Ulman photo #73, 74, 75).

b. ***Failure to separate incompatible chemicals.*** EPA inspectors observed several examples of incompatible chemicals stored sufficiently close together such that a

spill or release of one chemical could result in a chemical reaction with other chemicals, creating toxic gases and/or causing a fire or explosion.[3]

i. At the time of the inspection, three vertical tanks outside within the same bermed area were placarded (from right to left in the photos) as containing acetic acid solution (2790)(Tank #12), hydrochloric acid (1789)(Tank #3), and hypochlorite solution (1791)(Tank #4). (Gaffey photo #2059) According to a statement made by Mr. Mann at the time of the EPA inspection, the concentrations of the materials in the tanks were 56% acetic acid solution, 30% hydrochloric acid, and 15% sodium hypochlorite solution. Sodium hypochlorite can react with acetic acid or hydrochloric acid to cause an explosive, exothermic reaction and produce toxic, corrosive and flammable gases.

ii. Outside on the east side of the facility, EPA inspectors observed hydrogen peroxide storage (2014) tanks with a capacity of 17,000 gallons (Tank #1) and 3,300 gallons (Tank #2). Tank #2 extends beyond the bermed containment area (Gaffey photo #2110), into an area occupied by manifolds used as a filling station for hydrochloric acid (1789), acetic acid (2790), sodium hypochlorite (1791), and sulfuric acid (1830) (Ulman photo #56). (Gaffey photo #2110) Hydrogen peroxide can react with hydrochloric acid, acetic acid or sulfuric acid to cause an explosive, exothermic reaction and produce toxic, corrosive and flammable gases.

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[3] The reactivity of chemicals at the facility was predicted through the use of CAMEO Chemicals, an on-line tool designed for people who are involved in hazardous material incident response and planning, developed by the National Oceanic and Atmospheric Administration's Office of Response and Restoration in partnership with the Environmental Protection Agency's Office of Emergency Management and the U.S. Coast Guard's Research and Development Center.

iii. Outside on the east side of the facility, EPA inspectors observed an unlabeled tank (Tank #5), which according to facility personnel contained propylene glycol, located in close proximity to Tank #2, containing hydrogen peroxide 35% (2014) and drums also containing hydrogen peroxide. (Gaffey photo #2112) Propylene glycol can react with hydrogen peroxide, a strong oxidizing agent, to cause an explosive, exothermic reaction and produce toxic gases.

iv. At the time of the inspection, EPA inspectors observed a 1,000-gallon tank (Tank #13) of nitric acid (2031) with no secondary containment, located outside in the southeast corner of the facility, adjacent to a rusty 14,000-gallon tank (Tank #10) containing potassium hydroxide (1814) with inadequate secondary containment. (Gaffey photo #2129, 2130; Ulman photo #67) The secondary containment for Tank #10 was inadequate to contain a breach of the tank. Nitric acid can react with potassium hydroxide, a strong base, to cause an explosive, exothermic reaction and generate toxic, flammable and corrosive fumes and corrosive liquid.

v. Outside in the southeast area of the facility, EPA inspectors observed four metal kegs containing nitric acid (2031) next to a drum containing formic acid (1779). (Ulman photo #68, 69, 70) Formic acid can react with nitric acid, a strong oxidizing agent, to cause an exothermic reaction and generate flammable and toxic gases.

vi. In the northwest corner of the premises, EPA inspectors observed totes placarded as containing phosphoric acid (1805) next to a tote containing

ethylene glycol mono butyl ether (2369). (Ulman photo #22) Phosphoric acid can cause an explosive, exothermic reaction with ethylene glycol mono butyl ether and generate flammable gas.

vii. Outside along the south wall of Warehouse Area B, EPA inspectors observed drums placarded as containing ferric chloride (2582), potassium hydroxide 45% (1814) and nitric acid (2031) next to one another. (Ulman photo #31) Nitric acid can react with potassium hydroxide, a strong base, to cause an explosive, exothermic reaction and generate toxic, flammable, and corrosive fumes and corrosive liquid. Ferric chloride can react with potassium hydroxide to cause an explosive, exothermic reaction and generate toxic, flammable and corrosive fumes and corrosive liquid.

viii. Outside along the south wall of Warehouse Area B, drums placarded as containing methanol (1230), sodium bisulfite (2693), and acetone (1090) were located in the same area as nitric acid (2031) and acetic acid (2790). (Ulman photo #35) Methanol, sodium bisulfite and acetone can react with acids to cause violent, exothermic reactions and generate flammable, corrosive and toxic gases.

ix. Outside along the south wall of Warehouse Area B, EPA inspectors observed totes of phosphoric acid (1805) next to a drum of diacetone alcohol (1148). (Ulman photo #36) When combined, these two substances produce an exothermic reaction. In the same area, drums of ethylene glycol mono butyl ether (2369) were located next to a drum of potassium hydroxide (1814) and near nitric acid (2031). (Ulman photo #39) Nitric acid can react with potassium

hydroxide, a strong base, to cause an explosive, exothermic reaction and generate toxic, flammable and corrosive fumes and corrosive liquid. Both potassium hydroxide and nitric acid may react dangerously with ethylene glycol mono butyl ether, causing an explosive, exothermic reaction and liberating flammable and toxic gases and corrosive liquid.

x. Outside near the south wall of Warehouse Area A-2, the inspectors observed containers of sodium hydroxide 50% (1824) next to Liquid Tank #14 containing phosphoric acid (1805). (Ulman photo #73) Sodium hydroxide is incompatible with phosphoric acid and may cause an explosive, exothermic reaction, generating toxic, flammable and corrosive fumes.

xi. Inside warehouse area A-1, Pharmco storage area, EPA inspectors observed cardboard boxes of acetic acid (2790) stored next to boxes of nitric acid (2031) (Ulman photo # 98, 101), which when combined can cause an exothermic reaction. In addition, boxes of hydrochloric acid (1789) were observed being stored on top of sulfuric acid (1830). (Ulman photo #99) Hydrochloric acid can react with sulfuric acid to cause an exothermic reaction, generating toxic, flammable and corrosive fumes and corrosive liquid. EPA inspectors also observed cardboard boxes of ammonium hydroxide (2672) being stored next to boxes of nitric acid (2031) and sulfuric acid (1830) (Ulman photo #98, 103). Ammonium hydroxide can react with nitric acid or sulfuric acid to cause an explosive, exothermic reaction and generate toxic, flammable, and corrosive fumes.

xii. Inside warehouse area A, Pharmco storage area, EPA inspectors observed drums of tetrahydrofuran (2056) stored next to boxes of sulfuric acid (1830) which can react to cause an explosive, exothermic reaction. (Ulman photo #97) Additionally, a tote of 25% sodium hypochlorite (1908), a strong base, was stored next to boxes of sulfuric acid (1830), boxes of diethyl ether (1155) and drums of tetrahydrofuran (2056) (Ulman photo #97). When combined with sodium hypochlorite, sulfuric acid can cause an explosive, exothermic reaction and produce toxic, flammable and corrosive gases and fumes. When combined with sodium hypochlorite, diethyl ether and tetrahydrofuran can cause an explosive, exothermic reaction and generate toxic gases.

xiii. Inside the warehouse, EPA inspectors observed pallets of drums of potassium permanganate (1490) stored next to plastic bags of ammonium bifluoride (1727) (Ulman photo #91, 92, 93) and drums of 70% hydrofluoric acid (1790) (Ulman photo #85). Potassium permanganate can react with ammonium bifluoride to cause an exothermic reaction, generating flammable and toxic gases. Hydrofluoric acid can react with potassium permanganate and ammonium bifluoride to cause an explosive or exothermic reaction, generating toxic, flammable and corrosive fumes and corrosive liquid.

c. ***Lack of adequate secondary containment*:** At the time of the inspection, EPA inspectors observed the secondary containment for tanks holding extremely hazardous materials at the facility, including the tank building itself, to be entirely inadequate, with respect to the design, the integrity, and the general condition of the

systems.[4] Inspectors also observed many containers of extremely corrosive materials to be stored directly on the dirt. The lack of adequate secondary containment created a danger of chemical release if the primary container leaked or ruptured. Specific examples of the lack of adequate secondary containment follow.

i. At the time of the inspection, hydrogen peroxide (2014) storage tanks with a capacity of 17,000 gallons (Tank #1) and 3,300 gallons (Tank #2) were located within the same outside bermed area of the tank farm, directly behind the facility's main building. (Gaffey photos #2057 and 2058) A telephone pole is located within the bermed area, compromising the integrity of the secondary containment.

ii. At the time of the inspection, outside at the eastern edge of the facility, EPA inspectors observed hydrogen peroxide (2014) storage tanks with a capacity of 17,000 gallons (Tank #1) and 3,300 gallons (Tank #2). Tank #2 extended beyond the bermed containment area. (Gaffey photo #2110)

iii. At the time of the inspection, outside at the southeast corner of the facility, EPA inspectors observed a large rusty tank (Tank #10) of potassium hydroxide (1814) with secondary containment that was not large enough to contain a breach of the tank. (Gaffey photo #2127, 2128)

iv. At the time of the inspection, outside at the southeast corner of the facility, EPA inspectors observed a 3,000 gallon vertical tank (Tank #11) labeled as containing sulfuric acid (2796) (Gaffey photo #2113). The secondary containment area was not large enough to contain a breach of this tank; the

[4] Guidelines and standards for secondary containment for tanks and other containers holding hazardous materials can be found, *inter alia,* in the American Institute of Chemical Engineers (AIChE), *Guidelines for Engineering Design for Process Safety,* and the 2006 International Fire Code.

secondary containment area was in poor condition; and a rubber liner had been added to the containment area. Liquid was present in the rubber liner, and a test of the liquid by an EPA inspector showed it to have a pH of 1. (Gaffey photo #2115)

v. At the time of the inspection, outside on the east side of the facility, EPA inspectors observed the secondary containment area for unlabeled Tank #5, which according to facility personnel contained propylene glycol, to contain vegetative growth and debris, indicating that the containment area was not secure. (Gaffey photo #2111)

vi. At the time of the inspection, EPA inspectors observed the ground surface under the loading pipe for the sulfuric acid rail car (RR #2) to be discolored from acid spills and to be covered inadequately with a car floor mat to catch drippings. (Gaffey photo #2149, 2150)

vii. At the time of the inspection, two pails located directly outside the building housing four tanks of sodium hydroxide (1824) (Tanks #6, 7, 8, and 9) were open, unlabeled, and nearly full. (Gaffey photo # 2072-2075) Testing by an EPA inspector indicated that the pH of the liquid in the blue pail was 10, and the pH of the liquid in the white pail was 14. The pails also contained leaves and general debris.

viii. At the time of the inspection, outside at the southeast corner of the facility, EPA inspectors observed a nearly full pail being used to collect drippings from a Corrosive Liquid Tank (Tank #10A) placarded as containing formic acid (1779). (Gaffey photo #2146, 2147) Inspectors also observed staining of the

concrete ground under the pail, indicating that the pail was or had been overflowing.

ix. At the time of the inspection, EPA inspectors observed leaking phosphoric acid (1805) from Liquid Tank #14 into a pail under the tank. (Ulman photo #48, 49)

x. At the time of the inspection, EPA inspectors observed numerous containers of hydrofluoric acid stored inside the warehouse without secondary containment. (Ulman photo #85-90)

d. ***Improper storage:*** Inspectors observed numerous situations in which pallets of drums of hazardous materials were being stored with no aisle space and/or insufficient aisle space and containers of hazardous material were stacked up to four pallets high. Stacking containers four-high can make the stack unstable such that containers are more likely to fall and rupture. The following containers of chemicals are specific examples of hazardous materials being stored in a manner that posed a risk of chemical release, reaction or fire.

i. At the time of the inspection, EPA inspectors observed leaking valves and other corrosion associated with the sodium hydroxide (1824) solution tanks (Tanks #6, 7, 8, 9), located in the tank building in the southeast corner of the property. (Gaffey photo #2151; Ulman photo #60, 61, 63)

ii. Inside the warehouse, EPA inspectors observed potassium permanganate (1490) stored next to bags of ammonium fluoride (Ulman photo #91, 92, 93) and drums of hydrofluoric acid (1790) (Ulman photo #85), with insufficient aisle space and stacked four pallets high.

e. ***Open, unlabeled or mislabeled containers:*** Inspectors observed several instances where chemical containers were unlabeled or open, creating a threat of release and danger to employees or emergency responders.

i. At the time of the inspection, a stainless steel tank (Tank #13) had labels and placards that were partially removed. (Gaffey photo #2129) The partially removed label and placard indicated that the tank contained formic acid. Mr. Mann stated the tank actually contained nitric acid.

ii. Outside on the east side of the facility, EPA inspectors observed an unlabeled tank (Tank #5), which according to facility personnel contained propylene glycol. (Gaffey photo #2112)

NOTICE OF VIOLATIONS

Based on the EPA inspection of the facility and the foregoing findings, EPA is hereby providing Mann with Notice of the following violations of Section 112 of the CAA, 42 U.S.C. §7412, and 40 C.F.R. Part 68:

I. FAILURE TO IDENTIFY, EVALUATE AND CONTROL HAZARDS

The allegations in paragraphs 12 to 32 are hereby realleged and incorporated herein by reference.

33. Pursuant to 40 C.F.R. §68.50, the owner or operator of Program 2 processes is required to perform an initial process hazard review on covered processes. Pursuant to 40 C.F.R. § 68.50, the owner or operator must identify and evaluate the hazards of the process being analyzed; control the hazards identified; update the process hazard review every five years and when a major change in the process occurs; and comply with the documentation requirements of 40 C.F.R. § 68.50.

34. Pursuant to 40 C.F.R. § 68.10(a), the hazard review must be completed no later than the latest of the following dates: (a) June 21, 1999; (b) three years after the date on which a regulated substance is first listed under 40 C.F.R. § 68.130; or (c) the date on which a regulated substance is first present above a threshold quantity in a process.

35. Pursuant to the General Duty Clause, Section 112(r)(1) of the CAA, owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty to identify hazards which may result from accidental releases of such substances and to maintain a safe facility, taking the appropriate steps to prevent accidental releases and minimize the consequences of releases that do occur.

36. As described in paragraph 32 above, EPA inspectors observed deficient chemical storage practices at the facility that constitute a failure to identify and control hazards associated with the Program 2 hydrofluoric acid (70%) process. For example, the storage of hydrofluoric acid (70%) in close proximity to potassium permanganate and ammonium bifluoride, without adequate separation, could result in an explosive reaction or release of toxic fumes to the environment, potentially harming employees, first responders, area residents, infrastructure, and private property.

37. As described in paragraph 32 above, EPA's inspectors observed deficient storage practices associated with numerous chemicals that, alone or in combination, are "extremely hazardous substances" subject to the requirements of General Duty Clause. These deficient storage practices constitute a failure to identify hazards and maintain a safe facility, taking such steps as are necessary to prevent releases.

38. Accordingly, Mann violated the requirements to identify and control hazards as required under 40 C.F.R. § 68.50 (RMP) and the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

II. FAILURE TO SUBMIT A RISK MANAGEMENT PLAN

The allegations in paragraphs 12 to 38 are hereby realleged and incorporated herein by reference.

39. Under 40 C.F.R. §§ 68.10(a) and 68.12(a), an owner or operator of a stationary source subject to Part 68 must submit an RMP no later than the latest of the following dates: (a) June 21, 1999; (b) three years after the date on which a regulated substance is first listed under 40 C.F.R. § 68.130; or (c) the date on which a regulated substance is first present above a threshold quantity in a process. Sections 68.150-68.185 of 40 C.F.R. set out the required elements of the RMP. The RMP for a Program 2 process documents compliance with the elements of a Program 2 Risk Management Program, including 40 C.F.R. § 68.12 (General Requirements); 40 C.F.R. §§ 68.15 (Management System to Oversee Implementation of RMP); 40 C.F.R. Part 68, Subpart B (hazard assessment to determine off-site consequences of a release); 40 C.F.R. Part 68, Subpart C (Program 2 Prevention Program); and 40 C.F.R. Part 68, Subpart E (Emergency Response Program).

40. Mann failed to submit an RMP documenting compliance with the elements of a Program 2 Risk Management Program for its hydrofluoric acid (70%). Specifically, it did not develop management systems for the hydrofluoric acid; conduct a hazard review for the hydrofluoric acid; implement the Program 2 prevention requirements; or develop and implement an emergency response program.

41. By failing to submit a RMP for hydrofluoric acid (70%), Mann was in violation of 40 C.F.R. §§ 68.10(a) and 68.12(a) and Section 112(r)(7)(E) of the Act, 42 U.S.C. § 7412(r)(7)(E).

ADMINISTRATIVE ORDER

42. **As soon as possible, but no later than within 10 days of the effective date of this order**, Mann shall submit resumes and training certificates of all qualified persons for the work to be performed pursuant to paragraph 43 and 44 hereof. EPA will approve or disapprove of the qualified person(s) in writing. Mann shall submit the resume of a new qualified person within seven days of receipt of EPA's written disapproval.

43. **As soon as possible, but no later than 21 days from the effective date of this order**, Mann shall comply with 40 C.F.R. § 68.50 and the General Duty Clause, 42 U.S.C. § 7412(r)(1), in the following manner:

a. Properly separate and store incompatible chemicals at the facility, following generally accepted standards, such as the National Fire Protection Association (NFPA) Code (2008) Chapter 30; International Fire Code (IFC) Chapter 27; the Resource Conservation and Recovery Act, 42 C.F.R. § 264; guidelines contained in the American Institute of Chemical Engineers ("AIChE") *Guidelines for Safe Warehousing of Chemicals*, 2.6; and other applicable industry standards and practices, local codes, and state and federal regulations.

b. Ensure that any leaks from tanks or other containers and process-related operations are properly reported to the proper authorities, collected so as not to reach the environment, including but not limited to the adjacent waterway known as Assonaug Cove, and disposed of in accordance with applicable regulations.

c. Ensure that storage containers holding a material that is incompatible with other materials stored nearby in other containers be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

d. Ensure that all storage tanks provide a secondary means of containment for the entire capacity of the largest single container, and ensure that diked or bermed areas used as secondary containment are sufficiently impervious to contain the discharged contents of the container;

e. Ensure that no containers of hazardous substances are stored on dirt or other pervious surfaces.

f. Determine, in accordance with industry standards, that all tanks, drums, totes, and other containers are properly designed and made of compatible substances for the chemicals stored therein; ensure that all containers are in good condition and repair, free from leaks or signs of deterioration, and properly labeled; and that all containers are stored with sufficient aisle space to allow the safe movement and inspection of materials within the facility, as well as the safe movement of first responders wearing personal protective equipment, such as Self-Contained Breathing Apparatus (SCBA).

g. Establish a written protocol to ensure that incompatible materials are separated in the future; that hazardous materials are stored in proper containers and are properly labeled; and that all leaks are promptly and appropriately addressed so as to prevent hazardous substances from reaching the environment, including Assonaug Cove or any other water body.

h. Provide documentation that the requirements set forth in subparagraphs 43.a through g have been implemented, including that incompatible chemicals at the

facility have been properly separated, in accordance with the procedures contained in Appendix 1 to this NOV/AO/Information Request.

i. Develop and submit to EPA a work plan and schedule to conduct a hazard analysis of the facility pursuant to 40 C.F.R. § 68.50 and the General Duty Clause, 42 U.S.C. § 7412(r)(1). This schedule and work plan, once approved by EPA, shall be enforceable under this AO. Mann shall complete the hazard analysis as soon as possible, but no later than November 30, 2009, and the hazard analysis shall contain, at a minimum, the following elements:

i. For chemicals and processes regulated under 40 C.F.R. Part 68, the elements required under 40 C.F.R. §§ 68.48 and 68.50;

ii. For other extremely hazardous substances, an assessment pursuant to the General Duty Clause of all the hazards that could result from an accidental release of such substances, including, but not limited to an assessment of (a) the chemical storage/management practices discussed above in paragraph 32; (b) adequacy and compatibility of Mann's fire protection systems; and (c) compliance with applicable building and fire codes.[5]

iii. Recommendations and a schedule for addressing any findings.

j. A copy of the documentation and schedule required by paragraph 43 should be submitted to EPA in accordance with the instructions set forth in paragraph 45 .

[5] Guidelines and standards that may be useful in conducting this assessment include, among others, EPA's *Guidance for Implementation of the General Duty Clause, Clean Air Act Section 112(r)(1)*, EDIC 2000-01 (May 2000); NFPA Chapter 30, IFC Chapters 27 and 34, Material Safety Data Sheets, local fire and building codes, and several American Institute of Chemical Engineers (AIChE) publications, including *Guidelines for Hazards Evaluation Procedures, Guidelines for Engineering Design for Process Safety, Guidelines for Safe Storage and Handling of Reactive Materials, and Guidelines for Safe Warehousing of Chemicals.*

44. If Mann currently stores or plans to store hydrofluoric acid (50% or greater) at the facility in amounts that exceed the regulatory threshold, **as soon as possible but within no later than 60 days** from the effective date of this order, Mann shall:

a. Comply with all of the Program 2 risk management planning requirements found in 40 C.F.R. Part 68 including, but not limited to, 40 C.F.R. §§ 68.15 (Management System to Oversee Implementation of RMP); 40 C.F.R. Part 68, Subpart B (Hazard Assessment); 40 C.F.R. Part 68, Subpart C (Program 2 Prevention Program); and 40 C.F.R. Part 68, Subpart E (Emergency Response Program);

b. Complete an RMP that documents compliance with the Program 2 requirements, in accordance with the requirements for such plans found in 40 C.F.R. §§ 68.150-68.185;

c. Submit the RMP electronically, in accordance with the submittal directions found at www.epa.gov/emergencies/content/rmp/index.htm#submitting; and

d. A copy of the RMP and supporting documentation required under this paragraph 44 should be submitted to EPA in accordance with the instructions set forth in paragraph 45.

Note that, with respect to any new location for Mann's operations, 40 C.F.R. § 68.10(a)(3) requires that an RMP must be prepared and submitted no later than the date on which a regulated substance is **first present** above a threshold quantity in a process.

45. Notice: Submit all notices, schedules, workplans, and documentation required by this order to:

Len Wallace
Environmental Scientist, OES
U.S. EPA, Region 1 (SER)
Boston, MA 02114-2023

With a copy to:

Amelia Welt Katzen
Senior Enforcement Counsel, OES
U.S. EPA, Region 1 (SEL)
One Congress Street
Boston, MA 02114-2023

INFORMATION REQUEST

46. Pursuant to Section 114(a)(1) of the CAA, Mann shall submit the following information to EPA as soon as possible but within no more than twenty-one (21) days of receipt of this NOV, AO, and Information Request:

a. Indicate whether Mann has had on site any of the substances listed under 40 C.F.R. § 68.130 (including but not limited to hydrofluoric acid (50% or greater) from August 1, 2004 to the present. If the answer is affirmative, provide a list of the substances, the years in which they were present at the facility, the amount of each such substance present at the facility in each year, and where at the facility each such substance was managed.

b. Provide EPA with an estimate of the cost savings realized, if any, by failing to comply with the Program 2 RMP requirements for hydrofluoric acid from August 1, 2004 to the present. Provide EPA with the dates on which any RMP expenditures were made and the actual costs of complying with the Program 2 requirements, including, but not limited to completion of a RMP.

c. Provide EPA with a complete inventory of all chemicals located on site at the facility on June 25, 2009 and a copy of the facility's standard operating procedures for the management of hazardous materials.

d. Provide EPA with copies of all uniform hazardous waste manifests used to transport hazardous waste offsite since the EPA inspection on June 25, 2009.

e. Provide EPA with a list of all customers who have received hydrofluoric acid (50% concentration or greater) from Mann within the last three years. Provide the name, address, and quantity of hydrofluoric acid shipped for each such customer.

f. Provide EPA with a third party certification that all tanks, tank farms, and secondary containment systems have been tested for tightness, integrity, adequacy and leak protection and are in compliance with industry standards.

g. Notify EPA of any shipments of any of the substances listed under 40 C.F.R. § 68.130 (including but not limited to hydrofluoric acid (50% or greater) to other bulk storage facilities. Provide the name of the chemical, quantity, date shipped, and the name and address of the receiving facility within 10 days of any such shipment.

ENFORCEMENT

47. At any time after the issuance of this AO, EPA may take any or all of the following actions: issue a further order requiring compliance with the Act; issue an administrative penalty order for up to $37,500 per day for each violation; bring a civil or criminal action seeking an injunction and penalties. See Sections 113(a), (b), and (d) of the Act, 42 U.S.C. §§ 7413(a), (b), and (d); 40 C.F.R Part 19; and 73 Fed. Reg. 75340-75346 (December 11, 2008) (Clean Air Act penalties increased from $25,000 to $32,500 for violations occurring between March 15, 2004 and January 12, 2009 and to $37,500 for violations occurring after January 12, 2009). Be advised that Section 113(e)(2) of the Act, 42 U.S.C. § 7413(e)(2),

contains provisions that affect the burden of proof with respect to violations that continue following issuance of a notice of violation.

48. Be advised that issuance of this NOV and AO does not preclude EPA from electing to pursue any other remedies or sanctions authorized by law that are available to address these and other violations. This NOV and AO do not resolve Mann's liability for past violations of the Act or for any violations that continue from the date of this NOV and AO up to the date of compliance.

49. Neither EPA nor the United States, by the issuance of this NOV/AO/Information Request, assumes any liability for any acts or omissions by Mann or Mann's employees, agents, contractors, or consultants engaged to carry out any action or activity pursuant to this NOV/AO/Information Request, nor shall EPA or the United States be held as a party to any contract entered into by Mann or Mann's employees, agents, contractors, or consultants engaged to carry out the requirements of this NOV/AO/Information Request.

EFFECTIVE DATE AND APPLICABILITY

50. This NOV/AO/Information Request shall take effect within immediately. The AO shall apply to Mann, its officers, agents, servants, employees, successors, and assigns, and to all persons, firms, and corporations acting under, through, or for Mann. This action is not subject to Office of Management and Budget review under the Paperwork Reduction Act, 44 U.S.C. Chapter 35.

51. If Mann has any questions regarding this NOV/AO/Information Request please contact Len Wallace at (617) 918-1835, or have your legal counsel contact Amelia Welt Katzen, Senior Enforcement Counsel, at (617) 918-1869. Mann may request an opportunity to confer

with EPA within five days of issuance of this receiving NOV/AO/Information Request by contacting Len Wallace or Amelia Welt Katzen at the phone numbers listed above.

_____ _____

Susan Studlien, Director Date
Office of Environmental Stewardship
U.S. Environmental Protection Agency
Region I – New England

Appendix 1

Method for Documenting that Incompatible Materials Have Been Properly Separated

Mann shall follow the following procedures in documenting that incompatible chemicals have been properly separated.

1. List the extremely hazardous chemicals at the facility for which the incompatibility analysis was performed. This list shall include, but not be limited to, the chemicals described in paragraph of the NOV/AO/RR. The list may be limited to chemicals for which MSDSs are required by OSHA.

2. Describe all the standard(s) that Mann is following to properly separate incompatible chemicals.[6]

3. Develop a floor plan that indicates where each chemical is located. The floor plan should indicate how many feet are between each type of chemical and whether there is any secondary containment or barrier that separates the chemicals.

4. For any chemical that is located within 25 feet of another chemical without a physical barrier between the two chemicals ("co-located chemicals"), use the Chemical Reactivity Worksheet, which is available to the public at www.epa.gov/emergencies/tools/htm#crw, to run an incompatibility analysis for those co-located chemicals. Each chemical should be compared to each other co-located chemical. Submit these Chemical Reactivity Worksheets to EPA.

5. If the Chemical Reactivity Worksheet indicates that two co-located chemicals are incompatible, but Mann believes that the co-location of such chemicals does not present a risk, Mann shall describe why it does not believe the co-located chemicals present a risk.

6. When considering a chemical's compatibility with substances around it, note that some chemicals can have dangerous reactions with otherwise benign substances, such as water.

[6] For example, the MSDS for a chemical may indicate what substances are incompatible with the chemical; NFPA 30 recommends that incompatible chemicals be located a minimum of 25 feet from each other; the Resource Conservation and Recovery Act requires separation of incompatibles by physical barrier, such as a dike or berm; and AIChE *Guidelines for Safe Warehousing of Chemicals*, 2.6, recommends that incompatibles be separated by either (a) distance or an inert material (only for mildly incompatible materials); (b) fire resistant partitions; or (c) storage in separate buildings; and the 2006 International Fire Code at 2703.9.8 recommends (a) segregating incompatibles by a distance of not less than 20 feet; (b) isolating incompatibles in storage by a non-combustible partition extending not less than 18 inches above and to the sides of the stored material; and (c) storing liquid and solid materials in hazardous material storage cabinets.